UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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ATLANTA, GEORGIA 30303-8960

September 30, 2010

Mr. Patrick Tyndall
USDOT – FHWA
1835 Assembly Street, Suite 1270
Columbia, SC 29201

RE: EPA comments regarding
Draft Environmental Impact Statement (DEIS)
I-526 Mark Clark Expressway
From I-526 Interchange and U.S. 17 to the James Island Connector
Charleston County, SC
CEQ No. 20100286

Dear Mr. Tyndall:

In accordance with Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA) Region 4 reviewed the Draft Environmental Impact Statement (DEIS) regarding the proposed extension of the I-526 Mark Clark Expressway in Charleston County, South Carolina. EPA is a participating agency on this project, and the purpose of this letter is to provide our comments. Please note that EPA provided a separate comment letter to the U.S. Army Corps of Engineers (USACE) dated September 28, 2010 regarding the Joint Public Notice for this project.

The SCDOT selected Alternative G (construction of a 4-lane parkway and an adjacent multi-use path) as the Recommended Preferred Alternative. Alternative G is 7.9 miles long, with an additional 1.6 miles of connector roads (a total of 9.5 miles). In addition, Alternative G will provide bicycle and pedestrian facilities, as well as enhancements and additional access to the James Island County Park and the West Ashley Greenway.

Based on the information provided in the DEIS, Alternative G was rated "EC-2," meaning that environmental concerns exist, and that additional information is needed. EPA has environmental concerns about potential wetlands impacts from the project, and the FEIS should include updated information regarding wetlands data and the status of the 404 Permit review and issuance process. In addition, clarification is needed regarding purpose and need data, MSAT data, and measures to prevent further impacts to impaired 303(d) listed water bodies. Other areas of concern include traffic noise impacts, historic preservation and Environmental Justice (EJ) data. (Please see our enclosed detailed comments.)

Alternative G would impact 17.43 acres of wetlands and requires 16 stream crossings. Construction will require extensive marsh crossings and bridging. Salt marshes are sensitive environments and are susceptible to construction damage, settling and erosion.

Impacts from construction to impaired 303(d) listed water bodies are a concern, and the FHWA and SCDOT will need to ensure that construction takes place in a manner to minimize impacts. Floodplain impacts and protection of essential fish habitats are also important.

The DEIS discusses FHWA's guidance for evaluating Mobile Source Air Toxics (MSATs). The DEIS concludes that available technology does not enable prediction of the project-specific health impacts of the emission changes associated with the build alternatives (page 5-175). EPA disagrees with the FHWA's position on the state of the science, and believes that the alternatives can and should be compared with one another using potential MSAT impacts as one of the criteria. In addition, best management practices to reduce emissions during construction and maintenance of the roadway are needed in order to avoid and minimize emissions from CO_2 and greenhouse gases (GHGs).

Construction noise and operational noise from the parkway are concerns to nearby residences. Alternative G would have fewer noise impacts than the other build alternatives. Residences with noise levels approaching or exceeding the noise abatement criteria (NAC) were not modeled for noise barriers under Alternative G because of the ratio of the cost of the barriers to the low number of benefitted receivers.

A local historic district and archaeological site would be impacted, and a Memorandum of Agreement regarding mitigation is in development. The Final EIS (FEIS) should include updated information regarding coordination with the State Historic Preservation Office (SHPO).

We appreciate your early coordination with us, and look forward to reviewing the FEIS. If you have any questions, please contact Ramona McConney of my staff at (404) 562-9615.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Enclosures: EPA comments
Summary of Rating Definitions and Follow Up Action

Cc w/enclosures: Randall D. Williamson, P.E., SCDOT

EPA comments regarding
Draft Environmental Impact Statement (DEIS)
I-526 Mark Clark Expressway
From I-526 Interchange and U.S. 17 to the James Island Connector
Charleston County, SC

General

Overall, the DEIS is clearly written and illustrated, and we appreciate the indexing and tables, which facilitated our review. We have concerns regarding direct and indirect environmental impacts of the project, and clarification is needed regarding purpose and need data, MSAT data, wetlands impacts and mitigation, and measures to prevent further impacts to impaired 303(d) listed water bodies. In particular, EPA has environmental concerns about potential wetlands impacts from the project, and the FEIS should include updated information regarding wetlands data and the status of the 404 Permit review and issuance process. Other areas of concern include traffic noise impacts, historic preservation and Environmental Justice (EJ) data.

Purpose & Need

The DEIS states that the DOT's purpose of the project is to increase the capacity of the regional transportation system, improve safety and enhance mobility, referring to the West Ashley, John Island and James Island areas of Charleston. The U.S. Army Corps of Engineers (USACE) purpose of the project refers to completing the transportation link between the terminus of the James Island Connector at Folly Road and the existing terminus of I-526 at U.S. 17.

The SCDOT selected Alternative G (construction of a 4-lane parkway and an adjacent multi-use path) as the Recommended Preferred Alternative. Compared to the no build alternative, Alternative G has a modest reduction in vehicle miles travelled (1.9%) and vehicle hours of traffic (5.4%). In terms of increasing mobility, for two of the three routes, Alternative G will reduce the length of 21-minute commute by 36 seconds (calculated from data in Table 6.1, Comparison of Reasonable Alternatives, Part 1). The FEIS should clarify how this amount of reduction in vehicle miles travelled, vehicle hours of traffic and reduction in commute will serve to meet the stated purpose and need.

Part of the project's purpose is to improve roadway safety, and the DEIS notes that improved safety would result from construction of this project. However, further data should be provided regarding collisions, property damage and injury statistics, and how specific highway improvements, based on models, will increase safety by reducing the frequency of accidents.

Alternatives Analysis

The DEIS (Chapter 3) discusses 39 alternatives, including the no-build alternative, transportation systems management [TSM], mass transit, improvements to existing roads, and various new location build alternatives. We note that the preferred alternative, Alternative G, was selected prior to release of the DEIS.

Alternative G is the least expensive build alternative, and has the lowest number of relocations and noise impacts among the build alternatives. However, concerns exist regarding Alternative G environmental impacts and the extent to which it will meet its stated purpose. Construction will require extensive marsh crossings and bridging in sensitive environments that are susceptible to construction damage, settling and erosion. Indirect and cumulative impacts are also of concern, as well as potential impacts to already impaired water bodies.

Air Quality

SCDHEC determined that the project area is currently below National Ambient Air Quality Standards (NAAQS), and that the project is located in an attainment area (page 5-173).

The DEIS discusses FHWA's guidance for evaluating Mobile Source Air Toxics (MSATs). The DEIS concludes that available technology does not enable prediction of the project-specific health impacts of the emission changes associated with the build alternatives (page 5-175). While it is correct that these tools do not predict health impacts, they do allow a comparison of potential impacts among alternatives. The thrust of the text in the DEIS is at variance with the common practice of air quality and environmental health professionals, as reflected in the body of peer-reviewed literature employing these various models.

As an example, the National Cooperative Highway Research Program contractor report referenced below represents the views of air quality modeling and risk assessment experts, and reaches conclusions different from those in the DEIS.[1] The DEIS also contradicts EPA publications on air toxics.[2]

The qualitative assessment in the DEIS summarizes that all build alternatives would result in reduced MSAT emissions in comparison to the No-build Alternative, due to more direct routing and to the EPA's MSAT reduction programs (Page 5-177). The information presented in the DEIS on EPA's MSAT reduction programs does not inform the decision among options. The DEIS's purpose is to compare the impacts of those

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[1] Carr, E.L.; Ernst, D.A.; Rosenbaum, A.; Glass, G.; Hartley, S. (2007) Analyzing, documenting, and communicating the impacts of mobile source air toxic emissions in the NEPA process. Contractor report under NCHRP project 25-25.

[2] EPA. (2004) Air Toxics Risk Assessment Reference Library. Volume 1: Technical Resource Manual. Report number EPA-453-K-04-001A. [Online at http://www.epa.gov/ttn/fera/risk_atra_vol1.html] This document has been extensively peer-reviewed.

options at some point in the future, not to evaluate the impact of the EPA regulations between today and some point in the future.

Greenhouse Gases (GHGs)

We disagree with the statement on page 5-178 that *"It is not useful or informative at this point to consider GHG emissions as part of the Mark Clark Expressway DEIS. Climate change is inherently a global issue. The sources of GHG emissions that scientists believe are causing the current change in climate are from all over the world, and climate change does not easily lend itself to an analysis at a local level. Further, nothing in NEPA law explicitly requires an analysis of GHG at the project level and no national standards have been established."*

While we agree that carbon dioxide (CO_2) builds up in the atmosphere over time from emissions from many global sources, we also believe that the DEIS rationale for not taking reasonable actions to evaluate and potentially minimize GHG emissions where possible is not warranted, given pending Draft NEPA Guidance from the Council on Environmental Quality on Consideration of the Effects of Climate Change and GHGs (see http://www.whitehouse.gov/sites/default/files/microsites/ceq/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf).

In anticipation of this guidance, the FEIS should include, at a minimum, calculations regarding estimated upper bound annual emissions of CO_2 equivalents for the project and whether those anticipated emissions will be above or below 25K metric tonnes/year, (including construction and maintenance vehicles and equipment and the cars and trucks traveling on that segment of the parkway). We reserve the right to request additional detailed analyses when the CEQ guidance is finalized. As noted in the Draft CEQ Guidance, the consideration of current or projected effects of climate change on the project should also be discussed.

EPA also recommends a discussion of best management practices to reduce GHGs and other air emissions during construction and maintenance of the parkway. Specifically, clean energy options such as energy efficiency and renewable energy should be a consideration in the use of construction and maintenance equipment and vehicles.

For example, equipment and vehicles that use conventional petroleum (e.g., diesel) should incorporate clean diesel technologies and fuels to reduce emissions of GHGs and other pollutants, and should adhere to anti-idling policies to the extent possible (see our detailed Diesel Exhaust comments in the next section). Alternate fuel vehicles (e.g., natural gas, electric) are also possibilities.

Diesel Exhaust

In addition to EPA's concerns regarding climate change effects and GHG emissions, the National Institute for Occupational Safety and Health (NIOSH) has determined that diesel exhaust is a potential human carcinogen, based on a combination of chemical,

genotoxicity, and carcinogenicity data. In addition, acute exposures to diesel exhaust have been linked to health problems such as eye and nose irritation, headaches, nausea, and asthma.

Although every construction site is unique, common actions can reduce exposure to diesel exhaust. EPA recommends that the following actions be considered for construction equipment:

- Using low-sulphur diesel fuel (less than 0.05% sulphur).
- Retrofit engines with an exhaust filtration device to capture DPM before it enters the workplace.
- Position the exhaust pipe so that diesel fumes are directed away from the operator and nearby workers, thereby reducing the fume concentration to which personnel are exposed.
- A catalytic converter reduces carbon monoxide, aldehydes, and hydrocarbons in diesel fumes. These devices must be used with low sulphur fuels.
- Ventilate wherever diesel equipment operates indoors. Roof vents, open doors and windows, roof fans, or other mechanical systems help move fresh air through work areas. As buildings under construction are gradually enclosed, remember that fumes from diesel equipment operating indoors can build up to dangerous levels without adequate ventilation.
- Attach a hose to the tailpipe of a diesel vehicle running indoors and exhaust the fumes outside, where they cannot reenter the workplace. Inspect hoses regularly for defects and damage.
- Use enclosed, climate-controlled cabs pressurized and equipped with high efficiency particulate air (HEPA) filters to reduce operators' exposure to diesel fumes. Pressurization ensures that air moves from inside to outside. HEPA filters ensure that any air coming in is filtered first.
- Regular maintenance of diesel engines is essential to keep exhaust emissions low. Follow the manufacturer's recommended maintenance schedule and procedures. Smoke color can signal the need for maintenance. For example, blue/black smoke indicates that an engine requires servicing or tuning.
- Work practices and training can help reduce exposure. For example, measures such as turning off engines when vehicles are stopped for more than a few minutes; training diesel-equipment operators to perform routine inspection and maintenance of filtration devices.
- When purchasing a new vehicle, ensure that it is equipped with the most advanced emission control systems available.
- With older vehicles, use electric starting aids such as block heaters to warm the engine, avoid difficulty starting, and thereby reduce diesel emissions.
- Respirators are only an interim measure to control exposure to diesel emissions. In most cases an N95 respirator is adequate. Respirators are for interim use only, until primary controls such as ventilation can be implemented. Workers must be trained and fit-tested before they wear respirators. Personnel familiar with the selection, care, and use of respirators must perform the fit testing. Respirators must bear a National Institute of Occupational Safety and Health (NIOSH)

approval number. Never use paper masks or surgical masks without NIOSH approval numbers.

Wetlands

The DEIS (Chapter 6) includes a discussion of the 2008 mitigation rule and an outline of compensatory mitigation plans using mitigation banks. The 2008 Mitigation Rule outlines a watershed approach to assessment and mitigation alternatives. Coastal areas with localized watersheds and with tidal wetlands have many distinctive functions, and we have concerns regarding compensating for the functional loss resulting from construction of this project. A watershed-based assessment is needed in order to determine whether SCDOT has selected the best mitigation approach.

Construction will require extensive marsh crossings and bridging. Salt marshes are sensitive environments and are susceptible to construction damage, settling and erosion. The DEIS states that a causeway on temporary fill or barges/pallets are considered appropriate for construction in these sensitive areas (Chapter 6).

The project will also impact freshwater forested wetlands, and further information should be provided in the FEIS regarding these impacts. There are additional concerns regarding drainage and runoff management. The DEIS states that Best Management Practices (BMPs) will be implemented, and that roadway design would include the use of grassed shoulders and vegetated swales, where feasible, to aid in the removal of sediments and nutrients from the stormwater runoff prior to discharge to waters. Retention/detention basins would be used in some areas. Updated information should be included in the FEIS regarding drainage pathways from the roadway and bridges, impacts from construction of piers, and plans for management of potential hazardous material spills from vehicle accidents on and near bridges.

Total Maximum Daily Load (TMDL)

The focus of the TMDL process is reduction of pollutant inputs to a level (or "load") that fully supports the designated uses of a given waterbody. Loading capacity limits on TMDL pollutants will be required for the Stono River, due to its inclusion as an impaired water body on the Clean Water Act 303(d) list.

Each state must develop TMDLs for all the waters on the 303(d) list, and it is at the discretion of states to set priorities for developing TMDLs for listed water bodies. The mechanisms used to address water quality problems after the TMDL is developed can include a combination of BMPs and/or effluent limits and monitoring required through National Pollutant Discharge Elimination System (NPDES) permits. TMDLs are pending for the Stono River in the vicinity of the project study area.

Monitoring sites in the Stono River have shown contamination by low dissolved oxygen levels and copper excursions (page 5-197). In addition, fecal colloform bacteria is a pathogen of concern at Stono River monitoring sites. The primary sources of fecal

coliform bacteria are urban runoff and animal waste. This bacteria is a concern related to this project because of the amount of runoff that will be created by building this expressway and therefore increasing the amount of impervious cover. There are currently sites in the vicinity of the study area that are designated for shellfish harvesting but are not meeting their designated use due to fecal colloform bacteria impairment (as listed on the 2010 303(d) list).

We recommend that proposed wetland, streamflow, and streamside activities be carried out in a manner to reduce the inflow of fecal coliform bacteria to the river. In addition, area pet owners should be encouraged to properly dispose of pet waste, and BMPs should be employed to control urban runoff. The FEIS should provide updated information regarding stormwater management plans and facilities for the new roadway.

Please note that stations MD-025 and MD-026 are both impaired for dissolved oxygen (DO), per the 2010 303(d) list. The DEIS lists only station MD-026 as impaired, but is based on the 2008 303(d) list (page 5-197).

Environmental Justice (EJ)

There are four Environmental Justice (EJ) census block groups in the project area (based on 2000 U.S. Census data). The DEIS includes data from a block group analysis to identify the EJ areas that would be impacted by each of the seven roadway alternatives.

The DEIS states that Alternative G would have no disproportionate adverse impacts to EJ populations. The DEIS states that under the No-Build alternative *"...potential benefits of the Reasonable Alternatives such as traffic congestion relief, safety, and improved trade conditions would be lost,"* (page 5-139). Please clarify how trade conditions would be improved by the proposed project, and how EJ populations could potentially benefit from improved trade conditions. Also, it is not clear what percentage of the EJ population in the area have cars and would therefore benefit from traffic congestion relief and safety improvements if a new roadway were constructed in their vicinity.

We appreciate your public outreach efforts and note that public meetings and additional localized meetings were held during the scoping process.

Historic Preservation

We appreciate the discussion of cultural and historic resources in the DEIS. The Fenwick Hall Historic District and one archaeological site would be impacted by the Recommended Preferred Alternative (page 5-155). Consultation with the SHPO regarding historic preservation is ongoing, and the FEIS should include an update of these coordination activities. The mitigation for adverse affects of the project will be coordinated with the State Historic Preservation Office (SHPO) via a Memorandum of Agreement to be included in the FEIS.

Section 6.5.5 should be revised to include information regarding the mitigation of the adverse effects to the archaeological site, since this section mentions only the Fenwick Hall Historic District.

Noise

The DEIS states that areas of high-density development and residential areas were avoided to the extent possible during the development of the build alternatives. Alternative G would have fewer noise impacts than the other build alternatives. The majority of impacted receivers consisted of residences with noise levels approaching or exceeding the noise abatement criteria (NAC).

Noise barriers were not modeled for Alternative G because of the ratio of the cost of the barriers to the low number of benefitted receivers. Potential barriers for other build alternatives were analyzed, and determined not to be reasonable or feasible as noise abatement measures. Other forms of noise mitigation (or their combination) should be considered in addition to barriers, where barriers are shown to be infeasible or unacceptable, particularly in residential areas.

Additional forms of mitigation may include sound proofing significantly affected public facilities or shifting of the right-of-way (ROW) to include residential or commercial receptors that otherwise would be adjacent but outside the ROW and be heavily impacted, and/or development of vegetative screens as part of the landscaping in order to provide a visual separation from the project ROW.

In addition to traffic noise affecting residences and commercial sites along highways, it should be noted, relevant to the proposed project, that traffic across bridges can be particularly noisy. This is because bridges are high and exposed, sound travels well and is unimpeded over water, and vehicle tires traveling across expansion joints produce additional noise. Overall, traffic noise is an environmental concern in terms of the project incremental increases over existing levels, and the resultant projected noise levels.

It is our understanding that the type of roadway surfacing material may substantially influence the amount of noise impacts generated. As long as feasibility and safety requirements are met, surfacing materials which minimize noise through source reduction are preferred.

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate
The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alterative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information
The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment